

**ABSTRACT:**

1. Multi-axial monolithic acceleration sensor

2.1. In known acceleration sensors, the error angle between main sensitivity axis and the normal is only adjustable in a range of at most 20°. Or the acceleration sensors comprise different characteristics with respect to the three spacial axes, which places high demands on the evaluation electronics and precludes the use in vehicles.

2.2. Multi-axial monolithic acceleration sensor, with the following characteristic features:

the acceleration sensor consists of plural individual sensors with respectively a main sensitivity axis arranged on a common substrate,

each individual sensor is rotatably moveably suspended on two torsion spring elements and comprises a seismic mass with a center of gravity,

each individual sensor comprises means for the measurement of the deflection of the seismic mass,

the acceleration sensor consists of at least three identical individual sensors,

each individual sensor is suspended eccentrically relative to its center of gravity and

is rotated by 90°, 180° or 270° relative to the other individual sensors.

2.3. The invention is especially suitable for high-quality offset-stable capacitive sensors for use in vehicles.